

Information Technology Authorization Committee

Friday, April 20, 2001

9:00a.m. - Noon

ASU Downtown Center

502 E. Monroe, C368-370

Minutes

Present

Tom Betlach	Office of Strategic Planning & Budgeting
Phyllis Biedess	AHCCCS
Art Ashton for Dr. Linda Blessing	Board of Regents
Dave Byers	Supreme Court
Albert Crawford, Jr.	Private Industry
Dr. Michael Gentry	Federal Government
John Jacobs	Private Industry
Laraine Rodgers	Private Industry
Peter Woog	Private Industry
Rick Zelznak	Government Information Technology Agency

Absent:

Dr. Bill Lewis	Public Sector
The Honorable Dean Martin	State Senator
Danny Murphy	Local Government
Representative Roberta Voss	State Representative

Call to Order at 9:00 a.m. by Chairman Rick Zelznak.

Director's Report

Exhibit 1

Tribute to Art Ranney: House Resolution written by Rep. Roberta Voss

Project Approval

Department of Transportation

- **Intelligent Transportation System**

Exhibit 2

Frank Somers, Government Information Technology Agency Oversight Manager

ADOT Presenters: Tim Wolff, Manny Agah, Cheryl Waters

Tom Betlach

Does the ramp metering automatically program for set times or is

that under the original vision of this? You were going to have the loop detectors determine whether a ramp meter would be necessary. I know for awhile there were some software problems in getting that to work.

Tim Wolff We want some of the ramp meters in what's called traffic responsive mode, where it looks at the loops on the roadway and decides, based on traffic on the roadway, what ramp metering rate to set. We are doing that in some places.

Tom Betlach What percent of your ramp meters do you think?

Manny Agah Right now, about 30 percent or so.

Tim Wolff It's still an issue because we're only looking at the location directly in front of the ramp, it doesn't take into account five miles upstream and five miles downstream. That was the real issue why we turned off the traffic response is if there was an accident downstream and traffic was backing up, traffic might be good at that point and we let more vehicles on the freeway even though it's a worse situation downstream.

Tom Betlach Can you control the ramp meters from the Traffic Operations Center?

Tim Wolff A majority we can, all of them on the Freeway Management System (FMS) 46 miles we can. Ones off the freeway management system, we can not.

Tom Betlach You have DPS on site with you at the Traffic Operations Center?

Tim Wolff No, in fact we're installing fiber right now so their dispatch center can see everything that we can.

Tom Betlach It's quite a complex center and I'm curious as to why DPS would never use that as part of their dispatch.

Tim Wolff In the early stages, they actually staffed it with a dispatcher and an officer. The data and information was helpful for them. They just didn't have personnel and budget to staff it on a regular basis.

Tom Betlach Has the department ever done a study on all the miles that have monitored traffic system to determine what the costs and benefits were? The PIJ talk about benefits, but never really quantified that much.

Tim Wolff We've done a couple different studies; one was specifically around ramp metering and some of the benefits. Another was done by a Tucson company looking at the benefits for freeway management message signs, loop detectors, etc. We do have some data from both. Under single-page back sheet, under benefits, the 15 percent increase in freeway capacity came out of those studies. The 1/3-1/2 lane of additional capacity. Both of those numbers are not only Arizona numbers, but from national tracking, those are common numbers nationally.

Tom Betlach That's just from having the ramp meters?

Tim Wolff The 15 percent is from the ramp meters and if that's across 3-4 lanes, that's where you come up with the 1/3-1/2 additional capacity. The rerouting of the variable message signs from the studies, there is no real cost or benefit dollar value we equated to that. Some work could be done in that area.

Tom Betlach I notice some cities use the variable message signs to give an indication as to how long it will take you to reach a certain point. We tend to use the signs for "Don't drink and drive." How much actual usage of the signs do we use and how does it compare to other cities?

Tim Wolff We use it for construction notification before we start, also use it for major accidents and it's not part of normal congestion. In the past we used the public service

announcements re drinking and driving, seat belt use, child seat restraints. We put the same message up time after time and pretty soon the public just ignored it or the sign message was so complex, people slowed down and it increased the congestion, which defeated the purpose of the sign. You mentioned giving trip times to the public. At this time, we don't feel comfortable doing that because you have to have enough good information, what are the trip times to tell the public. If every day you put a sign up: trip time from one end of the Superstition to the other is 30 minutes, pretty soon the public does just disregard it. If you put up good time information, you need a good source, good detection and some level of confidence that you can on a daily basis give them good information.

Tom Betlach Was putting the loop detectors in part of the overall plan?

Tim Wolff I don't think so, display in the variable message signs. Atlanta did that with mixed success; Chicago is also doing that. That's a goal and direction but until we can put good information for calculating trip times up there, it would be self-defeating.

Dr. Gentry Go back to the quoted benefit numbers. Since this project is really an expansion of some technology already in place, can we verify from our own Arizona experience that these benefits are real or did this figure come from another location?

Tim Wolff The 15 percent increase in freeway capacity is our specific numbers on I10 west side of town. That was done by having the ramp meters on, shutting them off, turning on again and comparing when they were on and off.

Dr. Gentry These number are based on our actual experience, so can usefully projected for the expansion and literally translate into an a returnable Investment.

Tim Wolff Right, and the same way with the variable message sign, those were our actual information where we had accidents and looked for how much traffic went one direction versus another and we posted a message saying "accident this way, go the other." We compared traffic afterwards, so the 20 percent is also Arizona data.

Tom Betlach Of the \$8.4M in here for project costs, are we just doing 6A and 7A?

Manny Agah The PIJ involves the freeway management system variable message signs for statewide implementation, as well as some ramp metering. 6A and 7A are current projects that also include 7B (US60) from I10 to Val Vista (13 miles). Those are the three major projects as well as Tucson FMS.

Tom Betlach How much of the \$7.4 is Phoenix , how much is Tucson, how much is statewide?

Manny Agah We combined all the FMS activities for these calculations, don't have by specific project area.

Tom Betlach Can you break it out for me how much you're spending on cameras versus message signs versus ramp metering?

Manny Agah This PIJ has not involved purchasing equipment.

Tom Betlach I'm trying to get a feel of what the scope is.

Manny Agah The major cost in the project involves the design of the project, the construction of the project and system integration. This PIJ only involves system integration; the design and construction of ITS activities do not require a PIJ.

Tom Betlach All you're talking about here is extending the communications for those things, any additional software?

Manny Agah Example: freeway management system in Phoenix area. When we

implement a new segment of freeways, this segment will receive instruments defined in the field (signs, cameras, ramp meter, etc.). They will not work unless we integrate them with the existing system. The integration involves expansion of the electronic map so the incidents can be shown, the integration of the database with the existing system needs to be expanded to incorporate the new cameras, new loops. In most cases, it will involve network integration and adjustment and, as you said, software. Basically, the PIJ involves the whole migration process of adding these upcoming elements.

Karl Heckart If this equipment doesn't work without this integration activity, why is exempted from the PIJ process?

Frank Somers I can explain, that was done by the director years ago

Tim Wolff On the breakout, page 26 shows the hardware in the operation center computer system and the off the shelf software. \$3.6M for professional/outside services; \$2.3M for hardware; \$1.3M for software. This is broke out by freeway management versus variable management versus ramp metering and the fiber optic.

Tom Betlach It doesn't include the actual cost of the equipment.

Tim Wolff That's correct. That was exempted with things like traffic signals, controllers in the field, all field devices we put in on routine basis.

Tom Betlach If you're talking about the freeway management system, the system includes all the components, and not just software integration connecting the hardware to the existing infrastructure seems like a broader scope. I would be interested in spending time looking at the cost benefits of this system and the cost benefits compared to the life cycle maintenance. I saw operational cost, but I wasn't sure what ongoing maintenance costs were with this system. I feel comfortable approving this project at this point in time.

Laraine Rodgers Is there a need to go back to the Federal government to see if the funds are still available? When funds were received, was it guaranteed \$7.9M? Do you have to show benefits year by year to get the subsequent years of multi-year funding?

Tim Wolff We have a five-year program and these funds are in the five-year program, already authorized by the government. It won't change.

Tom Betlach Just to clarify, those funds can also be used for construction.

Laraine Rodgers If there are changes in the project specifically, could that take away previously-funded monies? You have latitude?

Tim Wolff Exactly. For construction projects, in order to account for runovers, we have to go back to State Transportation Board for approval. Before we can enter into a contract that exceeds the original estimated amount, we have to get approval.

Manny Agah The figure in this PIJ belongs to freeway management system and overall ITS projects, some are ongoing and committed to the increment. These projects are not going to be changed and funding won't be used for any other project.

Laraine Rodgers Did you integrate this and are you the one responsible for the business, the training, all the different components of making this work?

Tim Wolff That is the Traffic Operation Center's staff that works for Manny.

Laraine Rodgers Did you look at the GIS system?

Manny Agah Yes, the major portion of many of these activities are GIS-based.

Laraine Rodgers Page 15 – the system will affect one location only. It sounds like there is technology that needs to be integrated physically. Did I misread this? You could say there is a central operation center.

Tim Wolff The hardware and software development included in this PIJ is all at the Traffic Operation Center.

Karl Heckart How much has been invested in equipment that's not functional if you don't do the project?

Tim Wolff Freeway management system phases 6A, 7A, 7B, roughly \$20-30M.

Rick Zelznak Let me rephrase the question. If for some reason, 6A, 7A and 7B get cancelled, what kind of investments have been made up to this date to move those along in terms of equipment purchases or design work?

Karl Heckart It could have already been acquired and potentially installed out there, didn't fit under this automation oversight process – how much equipment has been acquired for in field that is a throw-away investment if this project is denied?

Tim Wolff Roughly \$20-30M. We can get an exact number.

Tom Betlach For the variable message signs, the cameras, the ramp meters? That's already been bought.

Tim Wolff Those are construction contracts, two of the three are underway already.

Karl Heckart There's major investments outside this process that I don't know how you can disassociate with them.

Rick Zelznak Can you talk about components in that \$20-30M, are you talking about construction, fiber optic conduit, signs?

Tim Wolff To clarify, when we built the freeways now, we only include the underground component, it's the plumbing (conduit, meter boxes and loop detectors in pavement). We build that with the freeway because all the ground is tore up already, very low cost implementation. If we go in after the fact, we're tearing up landscape and a lot of other components. The first two phases were retro-fits and the cost of landscape reestablishment alone was \$2M.

Tom Betlach Of the \$20M, how much of that is loop detectors?

Manny Agah The loop detectors cost approximately \$40,000 per mile.

Tom Wolff Probably about 20 percent of the \$20-30M is originally put in when the pavement was built. About two-three years after the highway has been open is when our goal is to go in to install the above-ground stuff: meters at ramps, cameras in the poles, message signs and structures. They are done as a separate construction project. The funding has to be done as part of the construction to make it effective, but the systems integration at the plug-in, turn-on stuff we wait a couple years to see how traffic will perform and what's going to happen.

Rick Zelznak In terms of your chart, how far along are you in already having established and put in that infrastructure?

Manny Agah Phases 1, 2, 3A and 5 are complete, they (inaudible). Phase 4 is under construction; 7A has been awarded and will start within a month; 6A construction will start within a few months; 7B is the latest project (I10-Val Vista) will start shortly.

Tom Betlach If we're talking about \$20M that's been excluded on the equipment side versus the \$7-7.5M here, you had initial cost of \$49M for 29 operational miles. Does that include all the equipment in that number or is it sort of infrastructure?

Tim Wolff That includes everything, the initial hardware, software, the field, development, outside service, all of that.

Tom Betlach Does it include all the equipment?

Tim Wolff Yes

Manny Agah That was phase I only. Because it was first phase, we had to construct a traffic official so we could upgrade. The original application software, which was the main software for the FMS, was developed under phase I but it was customized software and we have been upgrading as we move along with the purchase of off-the-shelf software as well.

Rick Zelznak From a practical standpoint, it makes sense that as you're putting this in in expectation of future FMS expansion. It sounds like you've got cost benefit information, not necessarily included here. Is that something that can be put together at this point in time?

Tim Wolff It depends on what level we're looking at. A couple examples using the 15 percent and the 1/3-1/2 lane, a ballpark number is \$1M per mile putting in technology, all the freeway management, the ITS. If we get 1/2 lane of capacity for that \$1M per mile, we contract with what it would cost us to put in an additional lane to widen and that could be anywhere from \$10-20M per mile. More if we include new structures and interchanges.

Rick Zelznak Can you quantify the cost effect on any kind of delay?

Tim Wolff I don't know if it would be significant per month. The significant time frame will be on those three phases when the contractors are nearing completion and they want to be testing. If the central software and hardware have not been updated, they won't be able to keep testing if we may incur damages on those construction projects.

Manny Agah Phase 4 testing will begin probably this fall.

Tom Betlach (inaudible)

Manny Agah No. 7A testing will be probably early next year; same with 6A; 7B will be about 1 1/2 years.

Tim Wolff Probably six months when you can get these changes made so that they are ready for their schedule.

Laraine Rodgers Is there an integrated project plan we can look at? That would help put this in perspective. We would understand the milestones.

Tim Wolff When this was done, originally designed about 10 years ago, there was a complete systems design done.

Laraine Rodgers Systems being the business side and the whole system?

Tim Wolff I'm not sure on the business side how much is included; that was a separate discussion. The computer systems and architecture side is documented.

Laraine Rodgers And is there an integrated plan that ties to the documented systems component so you can track the progress?

Tim Wolff There's an overall architecture that keeps getting updated.

Rick Zelznak The percent of the project completed currently and the scope of the project, what percent have you already completed or what percent does with the completion of this represent your entire ITS build-out plan?

Manny Agah The total mileage on the handout is 240 miles and we are concluding phase 4 implementation, which is under construction. We are completed 57 miles, so approximately 1/4.

Rick Zelznak Talk about the scalability you have built into the traffic operations center to eventually accommodate a build-out?

Tim Wolff In some areas we included additional capacity from the get-go. With the recent Y2K upgrade, we did look at that and built in some of the scalability for it. Things

you can't really account for are all the devices that plug into the field, like the number of switches, routers and modems that need to be included each time we add a different phase, that piece needs to be added. We didn't purchase all that upfront, obviously.

Manny Agah The software was designed to handle about 300 nodes, well beyond the original limits. The Tucson freeway management will not receive its own software in order to reduce cost, they will be using the same software from TOC to a remote connection.

Tom Betlach Is it standard for cities the size of Phoenix to tie everything into a central operation center, whether it is cameras, ramp meters, things like that? Does that become operational more than allowing ramp meters to stand alone more or less?

Tim Wolff There's a national database that the Federal Highway Administration keeps and the top 75 metropolitan areas in the country are all tracked against three different areas, one of which is freeway management basically. Another is freeway service patrol which we just recently implemented. I don't recall the third one. We're tracked against them all.. Approximately 1/3 of the country already has in place a significant amount of the surveillance in freeway management. About 80-90 percent of the country has in place the service patrol. They are projecting in 2005 what percentage of those urban areas will have all three of those components, like 60-70 percent. All of that information is online at the federal highway center.

Dr. Gentry The way the information is being presented, we're struggling with seeing the big picture where this part fits in. The statement was made that building additional freeway capacity is expensive. Where does this fit in as being cheaper to do this than other alternatives to just be comfortable with the money as going for the highest return on the investment possible? At this point, we're pretty well committed to parts of this but would like to see the big picture.

Tom Betlach I agree. The big picture including the whole scope of this project, including equipment, life cycle costs, benefits.

Dr. Gentry That is compared alternatives. It's missing. Here's a range of alternatives for increased freeway capacity and a claim that this is the cheapest way to get the capacity.

Manny Agah The study was done several years ago for Phoenix Metro and we have to report in the office. It showed in order to build one lane of freeway in Phoenix metropolitan area would cost \$24M, depending on if you have to purchase the right-of-way or not. Freeway Management System only cost \$1.1M. The congestion will not go away and it is not feasible to build more freeways especially in urban areas. That's why more cities in the U.S. are implementing freeway management system to manage traffic. Our functions are basically to freeway management, incident management and traffic information.

Dr. Gentry This buys 1/3 of the lane additional capacity. Is that adequate?

Tim Wolff In parts of the Valley it's not adequate. We built more freeways, we continue to build and yet we have more congestion. This does not say all congestion goes away and ADOT is very aware of that. This is one more tool to try to reduce the congestion, especially when an incident occurs, this system helps us manage the incident to clear things up quicker, to get the vehicles out of the way and to tell the public so they can take alternate routes.

Dr. Gentry There was an incident yesterday that this system might have have been of

value.

Tim Wolff Included in here is some infrastructure for rural parts of the state. We can put message signs as you leave the cities or approaching the cities, telling them what to expect in the next 50-100 miles. We're starting to do that.

Tom Betlach That's included in the scope?

Tim Wolff That is, those variable message signs are the rural project.

Tom Betlach Not the sign part.

(inaudible)

Laraine Rodgers Looking at it in context, then at actual plan, it makes sense we have something we can relate to. I would put that as a condition.

Dr. Gentry Does it make sense to defer action to next month?

Tom Betlach I think everybody has a feel for (inaudible).

Motion by (I WROTE DOWN) Dr. Gentry to hold project to next month;

Second by Laraine Rodgers;

Motion approved.

- **DES IT 2001 Refresh Project**

Exhibit 4

Frank Somers, Government Information Technology Agency Oversight Manager

DES Presenter: Bob Buse

Dr. Gentry I thought we had a statewide procurement contract, a vehicles for buying this kind of equipment. I want to make sure this refresh project will have the economic advantages of the state contracts, whatever you call it.

Bob Buse Everything we purchase IT-wide goes against the state contract.

Karl Heckart This brings up indirectly the reason for this project, the heart of the issue we discussed several times. In this PIJ, do we continue to fall further and further behind, I scrape together what I can and buy what I can. How will the state ever move forward when we continue to play this game? This isn't the only agency that has this problem. It seems we replace our fleet of cars every so many years. There ought to be built-in base line budget item that replaces these. Of course we replace all PCs every three years, but some are leased, there's no option about this. They must be replaced every three years. This continues to puzzle me why we go over and over this.

Bob Buse Not wanting to make a political statement or have it interpreted as such, but DES, as other agencies, will not be able to function and handle mission-critical work without technology. There seems to be a lack of awareness on the part of various individuals in the Legislature on the importance and value of technology as it relates to the ongoing functions of state government. I'm not sure there's any way this body can change that, although we would appreciate the effort. If you look at the number of automation projects at risk for non-funding out of this legislative session, you have to say what value does the Legislature place on technology as a productivity tool. We get into this catch 22 scenario where state workers are viewed as not being productive, they're not paid for their efforts competitively with private sector; yet when you try to get to get a productivity tool, it's like, well, they don't deserve them and you have a self-fulfilling prophecy showing state workers can't produce because you're not giving them

tools to allow them to produce.

Rick Zelznak We had this issue come up with ADOT as well on a 3-year PC replacement PIJ that went through. The idea of getting this thought about PC replacement in terms of operations—it's operations, like pencil and paper at this point. It's got to be looked at as operational cost as opposed to an equipment cost which is traditionally in budgeting zeroed out and zero budget and requested every single year.

Karl Heckart (inaudible) to understand this. There are accountants regular replacing cities, regularly replacing all over the place. It is the state that doesn't do this.

Phyllis Biedess If there is a state standard equipment replacement policy and if the organization is using the state contract, why does it come to ITAC at all?

Bob Buse That's been raised before.

Phyllis Biedess I know it has, it deals with some other questions as well. Maybe we just ask everybody one more time to look at what projects ITAC looks at.

Frank Somers That's a function of the law. If we open the issue of the language and the ITAC law, I have to paraphrase: ITAC will review all projects of \$1M or more. We have defined the \$1M to mean \$1M in development costs, not total cost, so that has somewhat reduced the volume. If you start plugging in equipment definition or areas of technology that ITAC did not have to review, we would probably be bringing in cameras, ramp meters, and variable message signs. If you didn't want to get into that, you could say anything that hooks up to a computer should be included in a Project Investment Justification and reviewed either by Government Information Technology Agency or ITAC. Then we're talking about a whole lot of stuff and more and more stuff as each month there is more and more integration. I wish there was a way around having to bring PC replacement projects in front of the committee because it tends to use the committee's time and tends to be a way of doing business when you hire an employee to have to have a desk, a chair, a telephone and a PC. Those things have to be kept up to date. At this point there is no way around it because of the language of the law.

Karl Heckart If you move to a PC leasing scenario, there would be a way around it and an operational cost instead.

Art Ashton My suggested procedure way is a lot of committees have what they call a "consent agenda." You don't discuss it unless a particular member of ITAC would want to pull it from the consent agenda. You just pass these things as a routine matter.

Laraine Rodgers Is there a way we can move toward the other which is to stop sub-optimizing, if you will, if the various agencies agree to doing it this way, maybe look at this on a statewide basis or broader. Is there a way we can do that and if so is ITAC in a position to help that?

Frank Somers On this particular project, these funds will be expended before June 30 of this year, meaning these funds were not particularly or specifically earmarked for PC replacement at the start of the current biennial budget cycle. These are surplus funds by the programs that are available to the PC replacement. This is why Government Information Technology Agency has hesitated in forcing a strict PC replacement policy, the money just isn't there for some agencies. In state government, we have Cadillac agencies and Yugo agencies. We have lots of Chevys and Fords in between; one size fits all doesn't work in all cases. We try to be flexible and let agencies make a business decision as to when they anticipate they can replace their PCs and adopt a regular cycle. **Rick Zelznak** I think setting even shorter terms is a

function of the budget.

Karl Heckart The PIJs don't necessarily line with the budget. You come and ask for what you want to do and you get approval and that goes into the budget process. Since you do a statewide annual inventory of all equipment anyway, why doesn't Government Information Technology Agency take a position saying we're going to line item here, this is called obsolete this year, bring forward an entire PIJ package to this group asking for approval for replacement of all this equipment totaling \$X, for X number of agencies – it's a blanket PIJ – and agencies participate within the realm of that, it's never a secondary decision and also becomes an item of significant size all by itself.

Frank Somers That's a possibility and we've looked at this omnibus PIJ concept. The only problem I can see is we go on the broad basis lots of folks will want to throw in infrared joy sticks, who knows what kind of stuff that may not be justified.

Karl Heckart Again, our PC standard, if you've got a standard, why not follow it?

Rick Zelznak We'll take a look and take it before CIO Council for discussion.

Motion by Al Crawford to approve;
Second by Phyllis Biedess;
Motion approved.

Three-Year Strategic Plan

Monthly Project Monitoring Report

Exhibit 6

Other Business

- Future Agenda Items

Motion by Al Crawford to adjourn the meeting;
Second by Phyllis Biedess;
Approved.
Meeting adjourned